

NPN High Frequency Transistor

MMST918 / PN918

●Features

- 1) High current gain-bandwidth product $f_r=600\text{MHz}$

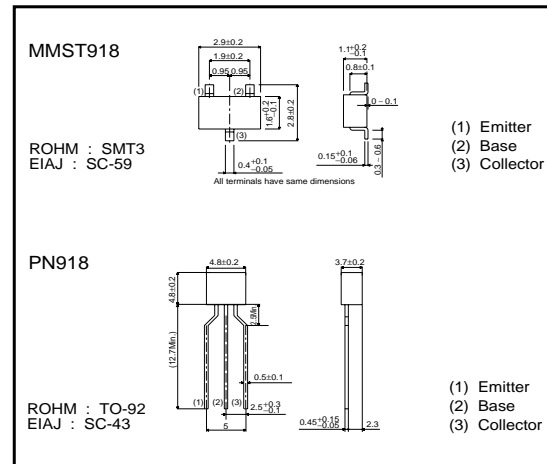
●Package, marking, and packaging specifications

Part No.	MMST918	PN918
Packaging type	SMT3	TO-92
Marking	RVX	—
Code	T146	T93
Basic ordering unit (pieces)	3000	3000

●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CB0}	30	V
Collector-emitter voltage	V _{CE0}	15	V
Emitter-base voltage	V _{EB0}	3	V
Collector current	I _c	50	A
Collector power dissipation	P _c	0.2	W
		0.310	W
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	−55 to +150	°C

●External dimensions (Unit : mm)



●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	V _{CB0}	30	—	—	V	I _c =1.0μA
Collector-emitter breakdown voltage	V _{CE0}	15	—	—	V	I _c =3.0mA
Emitter-base breakdown voltage	V _{EB0}	3.0	—	—	V	I _E =10μA
Collector cutoff current	I _{CB0}	—	—	0.01	μA	V _{CB} =15V
		—	—	1.0	μA	V _{CB} =15V, I _E =0, Ta=150°C
DC current transfer ratio	h _{FE}	20	—	—	—	I _c =3.0mA, V _{CE} =1.0V
Collector-emitter saturation voltage	V _{CE(sat)}	—	—	0.4	V	I _c /I _B =10mA/1mA
Base-emitter saturation voltage	V _{BE(sat)}	—	—	1.0	V	I _c /I _B =10mA/1mA
Transition frequency	f _r	600	—	—	MHz	I _c =4.0mA, V _{CE} =10V, f=100MHz
Output capacitance	C _{ob}	—	—	1.7	pF	V _{CB} =10V, I _E =0, f=140kHz
		—	—	3.0	pF	V _{CB} =0, I _E =0, f=140kHz
Emitter input capacitance	C _{ib}	—	—	2.0	pF	V _{EB} =0.5V, I _c =0, f=140kHz
Noise figure	NF	—	—	6.0	dB	I _c =1.0mA, V _{CE} =6.0V, R _G =400Ω, f=60MHz
Power gain	G _{pe}	15	—	—	dB	V _{CB} =12V, I _c =6.0mA, f=200MHz
Output power	P _{out}	30	—	—	mW	V _{CB} =15V, I _c =8.0mA, f=500MHz
Collector efficiency	η	25	—	—	%	V _{CB} =15V, I _c =8.0mA, f=500MHz

Transistors

●Electrical characteristic curves

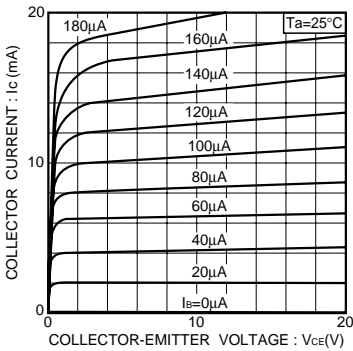


Fig.1 Typical output characteristics

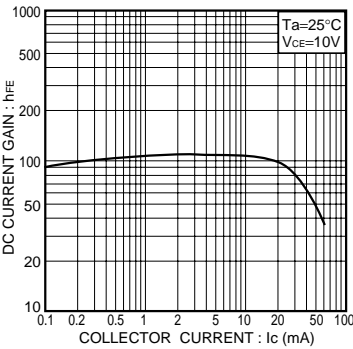


Fig.2 DC current gain vs. collector current

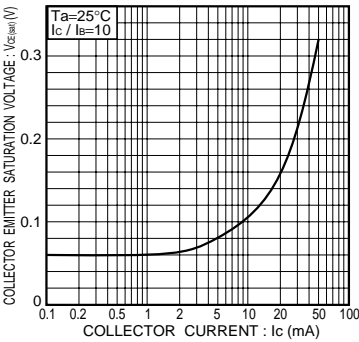


Fig.3 Collector-emitter saturation voltage vs. collector current

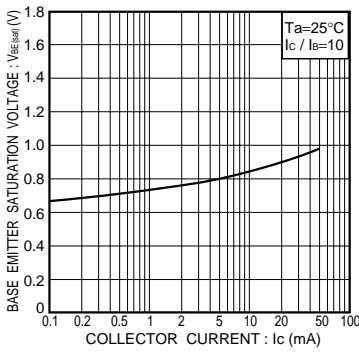


Fig.4 Base-emitter saturation voltage vs. collector current

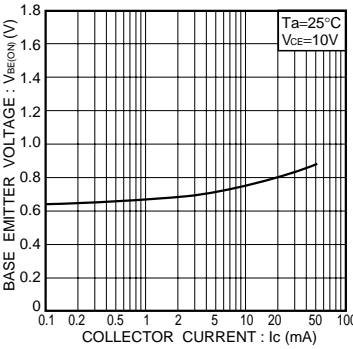


Fig.5 Base-emitter 'ON' voltage vs. collector current

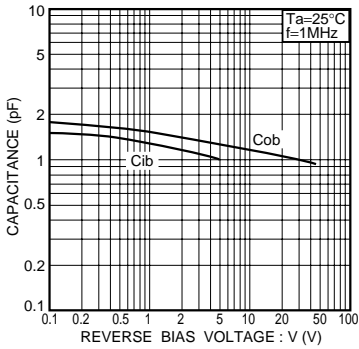


Fig.6 Capacitance vs. reverse bias voltage

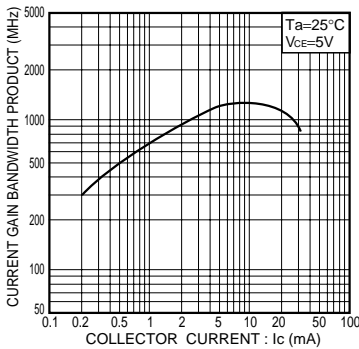


Fig.7 Current gain bandwidth product vs. collector current

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